

REMARKS

Claims 1, 10 and 18 are amended through this Amendment and Response. Thus, claims 1, 3-12, 14-18 and 20-38 are pending in the present application, of which claims 21-38 have been withdrawn. The Applicant has carefully and thoughtfully considered the Office Action and the comments therein. Each of the pending claims is believed to define an invention that is novel and unobvious over the cited references. Based on the following remarks, it is respectfully submitted that the instant application is in condition for allowance. Prompt reconsideration and withdrawal of the rejections is earnestly requested.

Examiner Interview

The Applicant wishes to thank the Examiner for the telephone interview on October 17, 2007. In the interview, patentability of claims 1, 3-12, 14-18 and 20 were discussed. However, no agreement was reached.

Grounds of Rejection

On page 2 of the Office Action, it is stated that "Applicant's arguments with respect to claims 18 and 19 have been considered but are moot in view of new ground(s) of rejection." Claims 18 and 19 were previously rejected in the Office Action of April 9, 2007 under 35 U.S.C. § 101. However, these claims are rejected under the same ground in this Action and no new grounds are presented. The Action does not address the Applicant's arguments regarding rejection of claims 18 and 19 under 35 U.S.C. § 101 set forth in the response filed on June 14, 2007. These grounds are partially presented in this Response and consideration thereof is requested.

Further, the Action is silent on whether the Applicant's remarks in response to the rejections under 35 U.S.C. § 103(a) were persuasive. It is therefore assumed that the Applicant's remarks were found persuasive and the rejections previously made under 35 U.S.C. § 103(a) have been overcome.

Rejections under 35 U.S.C. § 101

On page 2 of the Office Action, claims 1, 3-12, 14-18 and 20 are rejected under 35 U.S.C.

§ 101 as being directed to non-statutory subject matter. These rejections are respectfully traversed.

In rejecting claim 1, the Action asserts that “claims 1, 3-12, 14-18 and 20 merely disclose elements/steps of performing mathematical function without disclosing a practical application with a concrete, useful, and tangible result, as they are preemptive in any application.” Applicant respectfully disagrees with the Action’s grounds of rejecting claims 1, 3-21 and 14-18 and 20 because i) the Action applies an improper standard to determine patentability of these claims, and ii) these claims in fact do produce a concrete, useful, and tangible result, and are thus directed to statutory subject matter.

In order to determine whether a claim is directed to statutory subject matter under 35 U.S.C. §101, it must first be determined whether the claimed invention falls within at least one of four enumerated statutory categories of patentable subject matter recited in section 101 (i.e., process, machine, manufacture, or composition of matter). *MPEP §2106.IV.B.*

Claim 1 is directed to an apparatus producing a useful result (e.g., the claimed multiplier provides a product of contents of first and second registers and the third register receives said product). Independent claim 10 recites a system including a computational apparatus similar to the apparatus of claim 1. Independent claim 18 recites a method features similar to claim 1. Accordingly, independent claims 1, 10 and 18 all fall within at least one of the enumerated statutory categories of 35 U.S.C. § 101 (i.e., a machine, article of manufacture, or process).

Satisfying one of the four enumerated categories mentioned above does not end the analysis under section 101. To determine whether a claimed invention is statutory subject matter under section 101, it must also be determined whether the claimed invention falls within one of the section 101 judicial exceptions (i.e., laws of nature, natural phenomena, and abstract idea). *MPEP §2106.IV.C.* Examples of unpatentable abstract ideas are mathematical formulas and minerals discovered in earth. *Id.* While such abstract ideas are not eligible for patenting, methods and products employing abstract ideas to perform a real-world function may be patentable. *Id.*

To determine whether the invention falls within a section 101 judicial exception, the Action must ascertain the scope of the claim to determine whether it covers either a judicial exception or a practical application of a judicial exception. *MPEP §2106.IV.C.1.* “A claimed invention is directed to a practical application of a 35 U.S.C. §101 judicial exception when it:

- (A) ‘transforms’ an article or physical object to a different state or thing; or
- (B) otherwise produces a useful, concrete and tangible result.”

Id (emphasis added). If the claim found to be directed to a practical application of a judicial exception, it is eligible for patent protection. *MPEP §2106.IV.C.2*.

A) Claimed Invention Transforms an Article or Physical Object to a Different State

It is respectfully submitted that the Action improperly rejected claims 1, 3-12, 14-18 and 20 because it did not ascertain whether the invention that they claim transforms an article or physical object to a different state or thing. If “USPTO personnel find such a transformation or reduction, USPTO personnel shall end the inquiry and find that the claim meets the statutory requirement of 35 U.S.C. § 101.” *MPEP §2106.IV.C.2(1)*. The Action completely ignores this requirement and follows directly to state that the claims are unpatentable because they do not disclose a practical application with a concrete, useful, and tangible result.

As recited in claim 1, a multiplier is coupled to the first and second register to provide a product of contents of the first and second register, the contents being received by the third register. The register contents being loaded into the third register each cause a physical transformation within the third register. Loading data into a register results in a physical transformation in the internal components (e.g. latches) of the registers, causing the internal transistors interconnected inside the register latches to transform from one state to another so as to store a binary representation of the new contents in the register. Thus, claim 1 does in fact transform a physical object to a different state and is directed to statutory subject matter.

Claim 10 is submitted as being directed to statutory subject matter for the same reason as claim 1. Independent claim 18 recites “computing a product of said first and second operands using a multiplier” and “loading said product into a third register.” These features also establish a physical transformation within the third register as described above. Accordingly, it is submitted that claim 18 also meets the statutory requirement of 35 U.S.C. § 101.

B) Claimed Invention Produce a Useful, Concrete, and Tangible Result

Notwithstanding the fact that the determination set forth above should end the inquiry into patentability of claim 1, 3-12, 14-18 and 20 under section 101, it is further respectfully submitted

that claims 1, 3-12, 14-18 and 20 are directed to statutory because they produce a useful, concrete, and tangible result.

Claim 1 recites “a multiplier coupled to said first register and to said second register to provide a product of contents of said first and second registers” and “a third register coupled to said multiplier to receive said product as third register contents.” The product of the multiplier received by the third register is a concrete, useful, and tangible result. Specifically, the product is useful because it is a manipulation of data driven from two inputs that are coming from the first and second registers (and thus is specific, substantial, and credible; *See MPEP §2106.IV.C.2(2)(a)*); it is tangible because it is loaded into the third register (and thus is no longer an abstract variable; *See MPEP §2106.IV.C.2(2)(b)*); and it is concrete because the result of the product can be assured (and is thus repeatable and predictable; *See MPEP §2106.IV.C.2(2)(c)*).

The Action appears to reject claim 1 because it is not directed to computing an exponential or logarithmic function. It is respectfully submitted, however, that such rejection is unfounded and improper. Although the written description describes one exemplary embodiment of the invention in which the claimed structure is used to computer a logarithmic or exponential function, there is no requirement that such limitations be imported into the claim language itself, so long as the claim is fully supported by the written description. Thus, claim 1, as directed to an apparatus that produces a useful, concrete, and tangible result, satisfies the requirement of 35 U.S.C. §101 and should be allowed.

Claim 10 is directed at a system and should be similarly allowed. Claim 18 is directed at a method having a useful, concrete, and tangible result (e.g., “computing a product of said first and second operands using a multiplier” and “loading said product into a third register”) and should also be similarly allowed.

Claims 3-9, 11-12, 14-17 and 20 are dependent variously on claims 1, 10 and 18 and are submitted as allowable for at least the same reasons. Reconsideration of the claims, withdrawal of the rejections of claims 1, 3-12, 14-18 and 20, and allowance thereof, is respectfully requested.

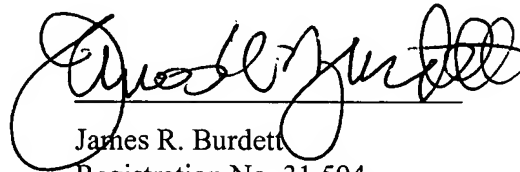
Conclusion

All of the stated grounds of objection and rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider all presently outstanding objections and rejections and that they be withdrawn. Applicants believe that a full and complete reply has been made to the outstanding Office Action and, as such, the present application is in condition for allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is hereby invited to telephone the undersigned at the number provided.

Prompt and favorable consideration of this Amendment is respectfully requested.

Respectfully submitted,

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